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Presented to Zoos Victoria

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Tenkile—Scott's Tree Kangaroo



Weimang - Golden-mantled Tree Kangaroo



Yongi—Grizzled Tree Kangaroo

Executive Summary

The Tenkile Conservation Alliance (TCA) focuses on the Scott's Tree Kangaroo (Tenkile) and Golden-mantled Tree Kangaroo (Weimang) as a flagship species for achieving broad forest biodiversity conservation outcomes in the Torricelli Mountain Range; Sandaun Province PNG. TCA's main objective is to establish this area as a legally protected Conservation Area. Jim and Jean Thomas, have been responsible for managing this project since January 2003. TCA's major partners are Zoos Victoria (ZV) and Australian Volunteers International (AVI).

This project has made significant progress including:

- Continuation of the hunting moratorium for the 18 "Tenkile" Villages. There has been no significant hunting of any fauna within the Tenkile habitat since 2004.
- An extension of the project area to include 21 "Weimang" Villages that have signed a hunting moratorium for the Golden-mantled Tree Kangaroo (*Dendrolagus pulcherimus*), for a period of two years. The project now encompasses the entire Torricelli Mountain Range.
- Significant capacity building to ensure local ownership and management of Tenkile and other wildlife in the seven Tenkile research sites across the Torricelli Mountain Range. During 2007, all scientific data was collected by local resource owners, independent of the TCA Project Manager.
- Preliminary results from TCA's Distance Sampling Research indicates a significant increase in the population of Tenkile. Approximately 160 (2004) and 240 (2006)
- Total landowner agreement to establish a Conservation Area within the Torricelli Mountain Range with the 18 Tenkile villages and three Weimang villages. All these villages have designated hunting areas from non-hunting areas and written their own rules and penalties for the long-term management of the area.
- The successful breeding of rabbits in Tenkile Villages has led to two people being trained as "Rabbit farming trainers". These trainers have successfully completed rabbit courses to all 21 Weimang villages.
- The establishment of rabbit farms in most Weimang communities.
- Teacher In-service Training Programs conducted for the Lumi and Nuku districts of Sandaun Province, to enhance the capacity of local teachers to conduct conservation education programs in their teaching.
- A participatory health and hygiene education program implemented to each Tenkile Village via locally trained facilitators.
- Workshops delivered in building local capacity for establishing new latrines and water supplies (water tanks). Delivery of materials to establish new facilities under the European Unions' Rural Water Supply and Sanitation Program (RWSSP).
- Local capacity built with the training and supervision of three Project Officers employed by TCA for future sustainability and management of all TCA's projects.

This programme is an outstanding model of how effective conservation outcomes may be achieved and assessed in developing communities when they are coupled with development of sustainable resource and economic alternatives.

Background



Students at Sibilanga
Primary School



Field Research in the
Torricelli Mountains



Transporting village water
supplies (Wigote village)

The Tenkile Conservation Alliance (TCA) is a Non-Government Organisation (NGO); established in 2001. TCA communicates regularly with government bodies and has established relationships with the local level governments of the Aitape/Lumi and Nuku districts, Sandaun Provincial Government and the Department of Environment and Conservation.

Populations of people in the Torricelli Mountain Range have trebled in the past 50 years. Traditionally a hunter/gatherer society this has led to a dramatic increase in the need for people to hunt. Along with changes in customs and hunting methods this has led to a dramatic decline in wildlife within the area. The two most endangered species in the Torricelli Mountain Range are the Scott's Tree Kangaroo, locally known as the Tenkile (*Dendrolagus scottae*) and Golden-mantled Tree Kangaroo (*Dendrolagus pulcherrimus*). Their distribution has been reduced by 70-80% within the last 30-50 years.

This decline in wildlife is also compromising the health and well being of the people in the area, who traditionally depend on this wildlife for their protein. This has contributed to low levels of nutrition in their diets, which is particularly deficient in protein.

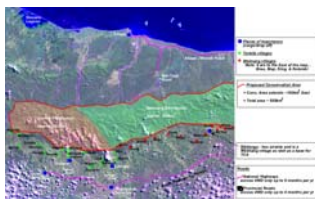
The project aims to conserve the Tenkile and Weimang through:

- Protection of Tenkile and Weimang habitat through the establishment of a Conservation Area
- Cessation of hunting of Tenkile and Weimang through hunting moratoriums
- Providing food security for local communities, through the introduction of alternate sources of protein, therefore alleviating hunting pressure on wildlife in the area
- Raising awareness of the significance of the Tenkile, Weimang and other wildlife within local community schools and villages, enabling them to make informed decisions on the use of their natural resources
- Developing the capacity of local communities to manage their natural resources sustainably, through education and training
- Population monitoring and research to assess future changes in the Tenkile and Weimang populations and other wildlife within the project area.
- Monitoring social impacts within the communities including affects of rabbit and chicken farming on hunting patterns, workloads and health status.

Conservation Area



Community Mapping Workshops - Waunulu



Map showing Weimang and Tenkile Distribution and potential conservation area land boundary



Mt Sapau - Torricelli Mountain Range (Sibilanga area)

The main objective of the Tenkile Conservation Alliance is to establish the Torricelli Mountain Range as a legislated Conservation Area to ensure the legal protection of the flora and fauna within this area.

Since late 2004 TCA has been liaising with local landowners and their communities to work toward the establishment of a Conservation Area. Communities have participated in mapping workshops in order to designate hunting and non-hunting zones on their land. Management committees have also been established in each village and their rules and penalties have been discussed. Presently, TCA has agreements with the 18 Tenkile villages and three Weimang villages in establishing a Conservation Area. Through further training and awareness TCA is confident that the remaining 18 Weimang villages (who have already signed the hunting moratorium) will agree to establish protected areas on their land.

TCA aims to conduct training of each management committee using an activity based education program to educate local people of the importance of their natural resources. A training manual has been written in Pidgin English and will form the basis of the training program. A 'hands on' interactive education program will complement the training manual and provide participants with a more experiential learning process.

Once the land boundaries have been confirmed by landowners and management committees, TCA will be mapping the area with Global Positioning Systems (GPS). A map will then be submitted to the Department of Conservation and Environment for government approval.



Walking to Distance
Sampling site - Bibane



Distance Sampling Officer
Training



Research Hut - Waliapilk

Research

TCA has been conducting Point transect Distance Sampling to determine the population density of Tenkile via scat counts since 2004. A one km baseline is established with 20 transect lines. Each transect line consists of 1-30 points with approximately 150 points at each site. Each site is surveyed for scats by a team of 12 people which takes up to five days to complete.

TCA has conducted this research at each of the seven distance sampling sites once per year. TCA now has data from 2004-2007. There are now research huts established at each site which provides better accommodation and storage of equipment.

TCA has trained two people from each of the 18 Tenkile villages as Distance Sampling Officers. These people are now able to record data, use some research equipment and work efficiently in the mountains. TCA has identified 10 Research Officers who act as team leaders and report to the Project Manager. During 2007 all seven Distance Sampling sites were surveyed independently of the Project Manager.

Preliminary analysis of the data, from 2004 to 2006, indicates the population of Tenkile has increased from approximately 160 to 240. This is a significant result which coincides with an increase in the number of Tenkile sightings. There have also been three villages which have sighted Tenkile in areas where they have not seen for more than 20 years.

TCA aims to include Point transect Distance Sampling with the Weimang villages when funding and resources become available. Field research and of other animal species is also planned, therefore giving a bigger picture to the overall conservation being achieved by TCA in the Torricelli Mountain Range. This research will deliver a clear picture to the changes in human hunting practices as well as studying many more species which have received little or no attention from science.

TCA aims to continue with its research component and to improve working standards by purchasing more research materials needed for work in the Torricelli Mountain Range. Villagers are extremely supportive and enthusiastic with TCA's research. There is a great sense of pride with Tenkile villages that have noticed an increase in Tenkile numbers.

TCA has a research permit, issued by the Department of Environment and Conservation, that allows Distance Sampling, radio-tracking and capture and husbandry of tree kangaroos.

Education



Teacher In-service
Training - Sibilanga(Nuku)



Facilitator and Project
Officer Training



Students from Sibilanga
Primary School

During 2007, TCA's education program focused on capacity building activities such as training the trainer programs.

Teacher in-service Training

In September TCA conducted a one week teacher in-service training course for both the Lumi and Sibilanga Districts. A total of 35 teachers representing 17 schools attended the training program. TCA provided teachers with a 128 page training manual complete with four Units of work that complement the PNG Education Departments Science and Social Science Curriculums.

The pre and post test results from this workshop showed a 49% improvement in knowledge among the participants while 37% remained the same and 14% of participants were worse. The attitude towards conservation was also assessed and results showed very little change among the participants.

The Teacher Training Program aims to provide teachers with relevant background information on basic scientific principles and conservation issues relevant to the local area. The manual contains step by step instructions for classroom activities. With this training teachers are now able to deliver conservation education within their classroom that aims to empower students and community groups to make a difference in their community.

Facilitator Training

TCA Project Officers and Facilitators attended a one week course in preparation for delivering a participatory Health and Hygiene Education Program. The course was based on the Participatory Health and Sanitation Transformation (PHAST) model used by the Rural Water Supply and Sanitation Program (RWSSP) - European Union. Facilitators received a copy of a step by step training manual written in Pidgen English and toolkit for delivering the program in each village.

Facilitators were trained how to deliver the education program in the village. The education program uses diagrams and activities that allow local people to discover for themselves what health and hygiene is and what they can do about it. The seven step process gives local people the responsibility and ownership for creating behavior change and new facilities. TCA provides communities with assistance in the delivery of materials and further training for the construction of VIP toilets, water tanks and tippy taps.

Rabbit Trainers

TCA employed two local people to become TCA rabbit trainers. They attended a one week training program using the same PHAST model. The model was adapted to help communities identify what their protein needs were and how they could implement change. The seven step process helped local people identify that there was a protein shortage and that domestic animals such as rabbit, fish or chicken were an easy protein alternative to hunting bush meat.

TCA believes this participatory program will ensure more local ownership and responsibility in the maintenance of any protein farming projects that are now implemented in the project area.

Protein Farming



Rabbit Training Workshop
in Ningal



Successful rabbit farm -
Wigote Village



Participatory activities for
establishing Community
Protein Projects

Rabbit Farming

The rabbit farming project was the first Alternative Protein Project to be implemented to the Tenkile villages in 2004. All 18 Tenkile villages have been given 12 rabbits and materials to establish their rabbit projects. By 2007 half of these villages no longer have rabbits mainly through poor management and lack of training. Local people "gave up" and stopped feeding the rabbits. However, 6 villages have proven to be successful while the other villages that still have rabbits and are committed to making the project work. Although they require more training the most successful village has been Wigote village with almost 80 rabbits being bred. The reason for the successful rabbit projects has been due to one person within the community who has taken the lead and managed the farms within the village.

During late 2007, the Rabbit Trainers conducted the "Protein Choices" education program in each of the 21 Weimang villages. Various members from each community participated in a one day workshop to identify if they had a protein shortage problem and what protein they would choose as an alternative. More than 630 people from the Weimang villages participated in the activities.

Following these activities, representatives from each village attended a one week workshop on rabbit farming. The TCA rabbit trainers delivered two training courses with over 100 people attending. The participants received a training manual written in pidgin English, two wire cages, nest boxes and two rabbits. A total of 18 Weimang villages now have at least two rabbits in their village and they will receive more rabbits as they become available from TCA's breeding center in Lumi.

Chicken Farming

Due to local demand, TCA commenced a chicken farming project in 2006. The aim is to deliver 22 Australaups chickens, which are both an egg-laying and meat bird, to each village. Short training courses on housing chickens and chicken farming will also be delivered in 2008. During 2007, TCA delivered various materials, to all 39 villages, that were requested by each clan or community to help establish and maintain their chicken farms.

Due to a lack of livestock available within PNG, only half the Tenkile villages have received chickens. These chickens have been bred using an Australaups rooster with local village hens. A total of 20 chickens have been distributed to 8 villages.

TCA aims to obtain funding to improve chicken farming in 2008 and beyond.

Community Development



Cabbage Grown from Gardening Workshop



Water supply in village (Rawete)



Health and Hygiene Participatory Education Program

Gardening

TCA has been conducting gardening workshop training for local people since 2005. Local people are trained in the establishment of their own nursery and seeds are distributed to the participants during the workshops. In 2007 four workshops were held and a total of 49 people attended. The purpose of the workshop is to encourage people to use a crop rotation style of gardening to minimize the impact of habitat loss through traditional gardening practices. This style of gardening also allows people to use the animal waste from the protein farms and enhances other non-traditional foods to grow for supplementing the people and the animals' diets.

RWSSP

In 2007 TCA was successful in obtaining a grant from the European - Rural Water Supply and Sanitation Program (RWSSP). The Program aims to improve the health and hygiene of rural communities by implementing health and hygiene education programs and improving new facilities such as constructing VIP toilets which consist of a cement floor, vent pipe and hole cover. TCA has delivered 60, 1000 gallon Tuffa Tanks and relevant materials to the 18 Tenkile Villages. Each Clan or community has paid a 10% community contribution so as to create a greater sense of ownership.

TCA requires a 10% cash contribution of the value of materials for all of its projects.

TCA Bases



TCA Base Station Lumi



Sibilanga - CBC
guesthouse



Road to Wewak

Lumi

The TCA has established a strong relationship with the local landowners from Maui village (in Lumi) and the local level government. A MOU has been signed between the Provincial Government and TCA to use the land until at least 2010. Currently the area of land TCA uses contains a staff accommodation building complete with a septic toilet and shower. A larger bush material style building for storage and visitor accommodation. There are various sized animal enclosures housing tree kangaroos, possums, birds, rabbits and chickens.

In 2006 a bush material style guest house was built for accommodating local village representatives and visitors in Lumi during workshops, training and meetings. The area is completely fenced providing a level of security for staff and TCA's assets. TCA plans to build a classroom for training and workshops during 2008.

TCA has satellite telephones and recently a VHF radio to communicate with the Tenkile villages. TCA purchased a vehicle, Toyota 4WD, during 2007 which has provided some flexibility in transporting materials. The road and bridge conditions remain a dangerous hazard to TCA staff.

Sibilanga

Since establishing the hunting moratorium with the Weimang villages a base for TCA staff has been required in this area. Sibilanga is central to all the 21 Weimang villages and TCA is now using an old Christian Bretheren Church (CBC) guesthouse.. TCA has established a good relationship with the CBC staff and now has a partnership with them in terms of managing and renovating the guesthouse in Sibilanga.

Sibilanga is situated 80Kilometes east of Lumi and is accessible by air but only partly accessible by road.

Wewak

Wewak is situated 270 kilometers from Lumi and is accessible by road and air. Although it is not the closest major town to Lumi it is the most convenient base for TCA to purchase materials and food. It is also the only place available to use internet and banking facilities.

TCA staff has also established a very good relationships and networks with local business owners. TCA staff use various facilities in Wewak every 6-8 weeks and more frequently when road conditions are favourable.

Administration



TCA Staff in Lumi



TCA Carpenters and Plumbers - Lumi



Capacity Building Officer at Sbilanga Primary School

Staff

The Tenkile Conservation Alliance currently has 11 full-time employees: they are: the

Jim Thomas-Project Manager

Jean Thomas-Capacity Building Officer

Patrick Ikon-Project Officer

Clancy Sumei-Project Officer

Mathew Akon-Project Officer

Francis Elpiti- Lumi Caretaker

John Wowi-Carpenter

Edward Saire-Carpenter

Leonard Towaiyu-Plumber

Hilary Ouyei-Security

Thomas Kesu-Security

TCA also employs two Rabbit Trainers, four Facilitators, 10 Research Officers and 26 Distance Sampling Officers on a casual basis when they are required. When needed for patrols, workshops etc various women and other local people are employed as cooks, carriers and laborers.

The on-going employment by TCA of local people has, over the years, provided a significant contribution in boosting the local economy. The wages TCA pays allows families to purchase basic items such as salt and soap as well as helping families pay for school fees to send their children to school.

Travel

Despite the purchase of a Toyota 4 Wheel Drive Land cruiser in early 2007, TCA's travel expenses continue to be a large part of the TCA budget. Flights in and out of Lumi are still necessary during the wet season or if the road has become impassible. Internal flights within PNG are expensive due to a lack of competition among airlines.

Accounting

Since the establishment of TCA in 2001, Price, Waterhouse and Coopers have been the honorary auditors for the TCA accounts. TCA has audited accounts for the past 6 years. TCA has bank accounts in PNG and in Australia.



Carrying water tanks to Wigote Vilalge



View of Torricelli Mountain Range from Sibilanga



PNG Orchid Show

The Future

2008

During 2008 TCA aims to:

- Conduct more awareness and mapping workshops for the establishment of the Conservation Area within the Weimang villages
- Map the conservation area boundaries and formalize the report for the Tenkile villages ready for submission to the Department of Conservation and Environment
- Conduct Conservation Area Management Training workshops for each of the Tenkile villages
- Continue Point transect Distance Sampling at the seven Tenkile research sites
- Establish three Weimang research sites
- Conduct 2 Teacher Training workshops (Lumi and Sibilanga)
- Finalise the current RWSSP Project and make a submission for a further grant. If successful TCA would implement the project again and possibly include the Weimang villages.
- Conduct further rabbit training in Weimang villages and complete the rabbit farming by providing villages with materials and rabbits.
- Conduct the protein choices activities with the Tenkile villages and re-assess the rabbit project. Provide further rabbit training for interested villages only.
- Purchase an incubator for improving the success of the chicken farming and distribute livestock to all villages.
- Continue capacity building with local staff particularly project officers.

2009 and beyond

- Focus effort on management training for Project Officers
- Finalise any outstanding work toward the establishment of the Conservation Area.
- Continue Distance Sampling and embark on further field research
- Continue teacher training capacity building and Conservation Area Management training for Weimang villages
- Continue rabbit and chicken farming projects

On September 1st 2009, Jim and Jean Thomas will be at the end of their present contract.

Acknowledgements

All TCA staff, village representatives, Tenkile and Weimang communities would like to extend their gratitude to Zoos Victoria for their on-going support and assistance. We look forward to continuing our partnership over the next two years and beyond.